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Case RN95059D2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of: JOANICOT et al.

Continuation Application of: Serial No.: 09/276,031      Group Art Unit:

Filed: March 25, 1999

Serial No.: to be assigned

Examiner:

Filed: to be assigned

For: LATEX DISPERSIONS CONTAINING A HYDROXYL FUNCTIONAL GROUP AND A CARBOXYLIC FUNCTIONAL GROUP AND THEIR USE FOR THE MANUFACTURE OF COATINGS.

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Prior to calculation of total filing fee, please enter the following amendment in specification and claims.

In the Specification:

On page 1, after the title, please insert the new following paragraph:

This application is a Continuation Application of U.S. Application Serial Number Serial No.: 09/276,031, Filed: March 25, 1999, which is a Continuation Application of U.S. Application Serial Number Serial No.: 08/638,032, Filed: April 26, 1996.

In the Claims

Please cancel claims 1-29 and add the following new claims 30-63.

30.     (New) A composition comprising a dispersion having at least one aqueous phase having a pH of between 4 and 9 and a population A of latex particles of polymer or of copolymer having acidic and hydroxyl functional groups whose particle

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size is between 10 and 1000 nanometers, wherein the particles have an accessible acidic functional group content, being the acidic functional groups, which are at most 5 nanometers from the surface of the particle- continuous aqueous phase interface, of between 0.2 and 1.2 milliequivalents/gram of solid matter, and an accessible alcoholic functional group content, being the hydroxyl functional groups, which are at most 10 nanometers from the surface of the particle-continuous aqueous phase interface, of between 0.3 and 1.5 milliequivalents/gram, and wherein said polymer or copolymer particles are originated from a copolymerization between at least one free acid monomer containing an activated ethylenic bond and at least one free alcohol, and, wherein a unit originating from said free alcohol monomer contains an activated ethylenic functional group which has a content of between 3 and 15 % (mole).

31. (New) A composition according to claim 30, wherein the accessible acidic functional group is a carboxylic group.
32. (New) A composition according to claim 30, wherein the particle solid content of the latex is between 10 and 80 % on a mass basis.
33. (New) A composition according to claim 32, wherein the content of the particles is between 10 and 60 % on a mass basis.
34. (New) A composition according to claim 30, wherein the acidic functional groups of the particles of the population A are weak acidic functional groups whose  $pK_a$  is at least 2.
35. (New) A composition according to claim 34, wherein  $pK_a$  is 3.

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36. (New) A composition according to claim 30, wherein the population A has a dispersity of  $([d_{90} - d_{10}]/d_{90})$  between 0 and 1/4.
37. (New) A composition according to claim 30, wherein the average molecular mass by weight of the polymer or copolymer is between  $5 \times 10^4$  and  $5 \times 10^6$ .
38. (New) A composition according to claim 30, wherein the said free alcohol monomer containing an activated ethylenic functional group is a diol monoesterified with an alpha-ethylenic acid.
39. (New) A composition according to claim 30, wherein the content is between 4 and 10 % (mole).
40. (New) A composition according to claim 38, wherein the said diol is an  $\omega, \omega'$ -diol.
41. (New) A composition according to claim 30, wherein the said free acid monomer is acrylic acid or one of its salts.
42. (New) A composition according to claim 30, wherein the unit originating from the free carboxylic acid monomer has a content of between 2 and 10 % (mole).
43. (New) A composition according to claim 30, wherein the particles are originated from a core covered by surface polymerization of said polymer or copolymer.
44. (New) A composition according to claim 30, further comprising up to 2 % by weight of an emulsifier.

45. (New) A composition according to claim 30, further comprising a population B of particles bearing isocyanate functional group(s).
46. (New) A composition according to claim 45, wherein the said isocyanate functional groups are masked.
47. (New) A composition according to claim 45, wherein the isocyanate functional group content is between 0.5 and 1 milliequivalent/gram of particles of population B.
48. (New) A composition according to claim 47, wherein the mass ratio of the populations A and B is such that the ratio of the alcohol functional groups to the isocyanate functional groups is between 0.1 and 10.
49. (New) A composition according to claim 48, wherein the ratio of the alcohol functional groups to the isocyanate functional groups is between 0.3 and 5.
50. (New) A composition according to claim 45, wherein the population B constitutes an emulsion with the aqueous phase.
51. (New) A composition according to claim 45, wherein the population B constitutes a latex with the aqueous phase.
52. (New) A composition according to claim 45, wherein the populations A and B coincide to constitute a population of particles containing free carboxylic functional groups, free alcohol functional groups and isocyanate functional groups at the same time.
53. (New) A composition according to claim 52, wherein the ratio (equivalent) of the isocyanate to the alcohol functional groups is between 0.1 and 10.

54. (New) A composition according to claim 52, wherein the ratio, (equivalent), of the alcohol functional groups to the carboxylic functional groups is between 0.2 and 5.
55. (New) A composition according to claim 52, wherein the ratio (equivalent), of the isocyanate to the carboxylic functional groups, is between 0.1 and 10.
56. (New) A composition according to claim 30, further comprising pigments.
57. (New) A paint or a varnish comprising a composition according to claim 30.
58. (New) A process for the preparation of a coating comprising the step of application onto a support of a composition according to claim 30.
59. (New) A process according to claim 58, wherein the said composition contains at least one isocyanate functional group and further comprising a step of curing at a temperature of between 120 and 200°C.
60. (New) A composition according to claim 40, wherein the said diol is 1,3-propanediol or glycol.
61. (New) A composition according to claim 30, further comprising isocyanates.
62. (New) A composition according to claim 61, wherein the isocyanates are soluble or insoluble in the aqueous phase.
63. (New) A composition according to claim 44, comprising up to 1 % by weight of said emulsifier.


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It is asserted that these amendments do not add new matter and are supported by the specification and claims as originally filed. Entry of these amendments is respectfully requested.

Respectfully submitted,

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